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ABSTRACT

THIS PAPER PROJECTS PRESENT TRENDS AND CAPABILITIES INTO THE FUTURE, CONJECTURES ABOUT THE EDUCATIONAL IMPLICATIONS OF THESE TRENDS, AND PROPOSES SOME POSSIBLE RESPONSES FOR THOSE INVOLVED IN THE PREPARATION OF SCHOOL PERSONNEL. IT IS SIMULTANEOUSLY AN ILLUSTRATION AND AN APPLICATION OF THE PROCESS OF "FUTURISM" AND ITS INCREASING RELEVANCE TO SYSTEMS-BASED EDUCATIONAL PLANNING. AFTER INTRODUCING THE RATIONALE FOR THE PAPER, THE AUTHOR PRESENTS A SERIES OF 18 CHARTS DESIGNED TO SERVE AS TENTATIVE PROCESS-MODELS WHICH, IF EXTENDED AND REFINED, COULD SERVE AS A BASIS FOR RESPONDING TO, AND PERHAPS EVEN INFLUENCING, THE NEEDS OF THE FUTURE. EACH CHART FOCUSES ON ONE OF 18 SOCIETAL TRENDS (E.G., "INCREASING YOUTHFULNESS OF THE POPULATION") AND OUTLINES ITS POSSIBLE CONSEQUENCE IN TERMS OF (1) EDUCATIONAL OUTCOMES, (2) IMPACT ON SCHOOL PERSONNEL, (3) IMPACT ON PREPARATION PROGRAMS, AND (4) ILLUSTRATIVE RESPONSES. AFTER PRESENTING A SYNTHESIS AND DISCUSSION OF THE CONTENT OF THESE CHARTS, THE AUTHOR IDENTIFIES AND RESPONDS TO EIGHT BASIC QUESTIONS WHICH ANTICIPATE THE DEMANDS OF THIS PROJECTED FUTURE (E.G., "WHAT VALUES SHOULD SCHOOL PERSONNEL HOLD AND WHAT RELATED TRAITS SHOULD THEY EXHIBIT?" AND "WHAT PERSONAL-SOCIAL-PHYSICAL DEFICIENCIES AND LIMITATIONS SHOULD BE REMEDIATED?") AND URGES THAT AN ACTIVE AND CONTINUOUS DIALOGUE BE ADDRESSED TO SUCH QUESTIONS. IN HIS CONCLUSION, THE AUTHOR STRESSES TWO POSSIBLE AND OPPOSITE DIRECTIONS IN WHICH WE MAY MOVE--ONE BASED ON AN OBLITERATION OF DEMOCRATIC VALUES, THE OTHER ON A FULLER REALIZATION OF THEM. (JES)

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Introduction

Projecting present trends and capabilities into the future, conjecturing about educational implications, and proposing some responses for personnel preparation are realistic and imperative actions for those dedicated to improve education through the strengthening of school personnel preparation. Whether one projects to 1984, 2000, or some other date, futurism offers valuable insights in assessing present programs and pointing preparation programs into desirable directions. Further, futurism suggests a process for studying and reacting to projected changes.

Educators have tended to be past and present oriented. This is understandable, for they are the official communicators of the culture. By definition they are rather conservative. They tend to be part of "the" establishment in attitude if not in fact. Now, change of great rapidity and magnitude is forcing educators to look to the future, for without such foresight there is a certainty that educational programs will rapidly become obsolete. Educators must use futurism--the projection of present and emerging phenomena and conditions to their ultimate conclusion through the use of varied intellectual processes--to keep the schools in the mainstream. Futurism is a tool to be used by those responsible for pre- and in-service preparation programs. It also is a tool to be learned and used by school personnel themselves in planning and conducting learning experiences.

This paper is an exploratory one. Several limitations should be noted at once, and some backgrounds for reading provided:

1. The exact extent, direction, and consequence of future change are beyond the realm of exact projection. Changes noted herein are commonly mentioned, but it is not within the scope of this paper to present corroborating evidence. Indeed it would be presumptuous to speak authoritatively concerning the need to study the future scientifically in many fields. The verb "will" is commonly used for consistency in style; its use is not a dogmatic assertion of fact. The probability of projected change is left to the reader. All guesses could be shot full of holes by major calamities or changes of direction.

2. The projections and applications noted herein are not reflections of what <u>should</u> or <u>must</u> be. Rather, the projections are what appear to be likely, given present ideas, information, and conditions. (Much of this paper is personally disturbing to the writer!) The paper reflects the assumption that the schools are servants of the marketplace--that is, they must prepare personnel for the roles and responsibilities in the schools. The question of which changes can or should be made requires a context larger than this paper. Such a question is too important and complex to be included superficially.

3. The feasibility of ideas presented also is happily avoided. This too would be a major study in itself. No effort has been made to develop a comprehensive, unified proposal on the future; therefore there are some gaps and, even worse, some conflicts in the projections. The ideas presented are exploratory and illustrative.

4. Originality in much of this discussion is open to question. In reviewing others' ideas on the future, adapting them, and supplementing them, it is difficult to give adequate credit to others. Hopefully, plagiarism has been avoided. Many of the ideas in this paper seem to have wide circulation, and it would be difficult to ascribe proper credits. Parts 2-5 tend to be more original than Part 1. The precise organization of the paper appears to be original.

5. "School personnel" is used in a general sense. The broad focus is on instructional personnel who work directly with "students"--those who correspond roughly to present elementary-secondary children and youth. Undoubtedly, there will be many future changes in the way in which staff and students are organized to carry out their emerging roles and responsibilities.

Hopefully, those responsible for pre- and in-service personnel preparation will extend the projections and refine the processes contained in this paper. The pressures for relevance in preparation programs are real and reasonable. Resistance to change is strong, and historically resistance has tended to block change. The time is here for responsible educators to develop both a commitment to reasoned

change to accommodate new needs and to processes which will be viable in implementing sound proposals and screening out poor ones--"sound" or "poor" on the basis of carefully conceptualized criteria.

A Look Toward the Future

The following pages contain a series of loosely related charts. Each analytical chart provides a simple flow from a description of projected changes through to illustrative responses in school personnel preparation programs. Both analyses and illustrative responses are brief and incomplete, in the assumption that the reader is rather well versed on the future and can provide many additional ideas with relatively little simulation. The basic purpose of this section is to provide the beginning of a conceptual framework for adapting preparation programs to changes as they occur. This should minimize the historic tendency to respond to crisis with crash programs (for example, varied reactions to Sputnik).

The charts may be read in a meandering fashion as a stimulant to self-defined structure. The general flow in reading should be from "1" to "5." Each section, labeled with an arabic number, should be read as a block. A sub-section, for example one headed by a small "a" in section "2" is not necessarily directly related to "a" in "3."

Synthesis and Discussion

On first reading it may seem that this paper is primarily pessimistic in orientation. Actually, it is neither pessimistic nor optimistic. It is pragmatic and implies that the future of democracy and the educational means of maintaining democracy as it is idealized in America is uncertain and insecure. In a fast-changing world, it is not possible to take anything for granted.

Rather, it is essential that those who hold certain values study the issues, select viable and acceptable alternatives, plot effective strategies, implement decisions with due speed, and continuously assess and revise objectives and processes as needed. With change occurring rapidly--and always in the direction of complexity--the future of any society cannot be left to chance or random experimentation. Particularly in American society--which is the focus of this paper--careful utilization of futurism as a social tool is important. Democracy is fragile and relatively untested as a way of organizing individuals--with guaranteed rights and dignity--into a viable society. The

Futurism as a Social Tool and Decision-Making by an Elite

1. OVERVIEW

a. Description

The capability of projecting present potentialities and emerging developments into the future will be increased. The complexity of the society and rapidity of change will require that comprehensive long-range planning become the rule, in order that carefully developed plans will be ready before changes occur.

b. Consequences

Long-range planning and implementation of plans will be made by a technological-scientific elite. Political democracy, in the American ideological sense, will be limited to broad social policy; even there, issues, alternatives, and means will be so complex that the elite will be influential to a degree which will arouse the fear and animosity of others. This will strain the democratic fabric to a ripping point.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Pressures on the schools to meet highly specific social demands, as identified and specified by the elite	a. Need to translate social imperatives into curricular-methodological realities	a. More emphasis on interdisciplinary studies and experiences, to enable school personnel to function within the total social setting	a. Interdisciplinary studies, taught through programmed means and in seminars
b. Programming of much of teaching and learning by means of computers, paper-type programmed materials, teaching machines, and other technological means of attaining a prescribed curriculum	b. Need to help individuals maintain a degree of uniqueness while preparing for social roles	b. Use in applied situations of varied teaching-learning tools, as means of extending personal capabilities	b. Varied vicarious experiences such as simulation and applied situations as staff service in agencies and enterprises
	c. Need to master technological means of instruction in a way that is personally meaningful to students	c. Provisions for experiences in varied social settings, as means of learning about social realities and how to function effectively in those settings	c. Directed experiences in scenario writing (dramatizations of projected situations), utilizing model decision-making processes, and confrontation situations --all designed to improve school personnel capabilities in projecting the future and planning for it

Population Concentrations

1. OVERVIEW

a. Description

While population control will ultimately be effected voluntarily or legally, over-population will characterize much of the world for some time. The enlarged population will be concentrated in relatively small sections of the country, thus creating large metropolitan areas such as one reaching from Boston to Washington.

b. Consequences

Society increasingly will accept regionalism as a viable solution to complex problems, but society will not move fast enough or with sufficient vigor. Population increases in the U.S. itself will be manageable in terms of needed increases in planning and services. Concentrated populations will create tensions and strain public services.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content focussed on differences and likenesses of people	a. Need to understand the dynamics of population concentrations	a. Extensive interdisciplinary studies and experiences	a. Interdisciplinary seminars
b. Laboratory and field experiences in developing human relations competences	b. Need to be competent in performing leadership roles in the community	b. Extensive and intensive laboratory experiences which develop interpersonal and group attitudes and skills	b. Sensitivity training
c. Efforts to improve self-concept to enable each person to maintain uniqueness among the multitudes	c. Need to develop individualized instruction and counselling competences	c. Varied experiences in providing individualized instruction and counselling of students	c. Counselling practicum
d. Increase in individual recreational, cultural, and learning activities to help individuals maintain their uniqueness			d. Micro-teaching and tutoring experiences focused on individualized instruction

Increasing Youthfulness of the Population and Generation Gap

1. OVERVIEW

a. Description

The actual number and percentage of the population under 30 years of age will increase. The values of the young will influence those over 30 significantly. Thus, the society will be a youthful one in terms of attitudes, objectives, and practices. A generation gap of major proportion will exist.

b. Consequences

The young in age or in attitude will predominate in all aspects of the society. Older members will periodically attempt repressive measures to stem societal changes which seem too radical, unfeasible, and so forth.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Decrease in content with a past orientation; increase in content with intrinsic values	a. Need to be flexible in attitudes, methods, and content selection	a. Efforts to provide intensive experiences which can yield such competence and a sense of security concerning content and method that on-the-spot adaptations can be made in response to student interests	a. Extensive pre-service and in-service involvement of young personnel in decision-making on selection, training, and retention policies and practices
b. Methodology which stresses involvement of students in much activity	b. Need to be competent to a degree which is evident to the young and which stimulates openness to adult guidance	b. Improved image of the profession as the number of youthful personnel increases (with concomitant improved recruitment and retention)	b. Clinical experiences with youth in varied settings
c. Facilities which are pleasant and activity-oriented, for day-night, year-round use	c. Considerable tendency to seek a share of pleasure while continuing intellectual-cultural pursuits, producing a degree of understanding of the younger generation	c. Increased efforts to broaden knowledge of and understanding of the young	c. Confrontation sessions involving prospective personnel and high school youth to increase competence in working with them

Biological Capabilities in Controlling Inherited Characteristics and Potentialities

1. OVERVIEW

a. Description

Biological capabilities for controlling a child's birth and his development and reactions after birth will increase. Birth control capabilities will become perfected on a semi-permanent level. Thus, most children will be wanted and "designed" with maximum capacities for future development and minimal hindrance to projected development.

b. Consequences

The society's capacities for quality living will be enhanced by the quality of its citizenry and the level of development which will be reached by many. However, for personal-philosophical-political reasons, birth control may not be practiced, and children may be programmed without balanced characteristics and capacities. Potentialities for conflict will be increased by various kinds of elites with different values and priorities.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Working relationships with medical centers to facilitate the use of medical tools to produce children of desired learning potentialities	a. Greater need to be able to help extremely different individuals attain maximum development--or at least to individualize instruction to promote growth in prescribed directions b. Greater need to be able to work with children who are biologically superior (years needed before biological improvements will be reflected in the kinds of persons in the professions)	a. Increased efforts to improve diagnostic and prescriptive skills b. Increased efforts to minimize deficiencies and build on strengths	a. Increased efforts to create diagnostic and prescriptive competences on an individualized basis, e.g. through use of tutoring experiences b. Utilization of drugs, organ transplants, and other means in an effort to minimize some of the biological gap between personnel and students

Body Repair and Health Improvements

1. OVERVIEW

a. Description

There will be significant increases in capabilities of improving health and extending the life span. Artificial organs, cell restructuring, and chemical applications will permit major changes in individuals after birth. Indeed, major changes will be induced in total populations through manipulation of water and food supply, climate control, and the building of structures with total environmental controls. Ultimately, these capabilities will produce conflict between those who want to live and those who want to create new life.

b. Consequences

Society's capabilities for improving quality of living and lengthening the life span will create a frightening dilemma: 1) more time to live, with greater physical health; 2) less meaningful activity to translate time into purpose and pleasure. Major policy conflicts will arise over biological capabilities to change individuals.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT OF PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Some increase in efforts to help students build philosophic foundations on which to develop constantly revised personal constructs of life	a. Need to help students develop attitudes compatible with societal needs and personal values, both placed under strain by emerging biological capabilities	a. Some increase in emphasis on the foundations areas	a. Seminars focussed on personal-social issues
b. Some increase in efforts to improve motivation toward and capability for wise use of time	b. Need to help students gain experiences in translating value questions into operational terms	b. Some increase in studies of the physiological aspects of human growth and development	b. Individual study projects directed by various kinds of specialists, integrated in group seminars
	c. Need to increase skills in working with professionals from the biological fields	c. Some increase in experiences designed to improve capabilities in determining social policies	c. Tutoring experiences with children who have contrasting biological traits

Shifting Social Values

1. OVERVIEW

a. Description

Rapidity and magnitude of change, individual susceptibility to attitudes influencing actions, intensity of interaction in highly concentrated population centers, and other factors will increase the rate of value change and their extent.

b. Consequences

Cohesive, stable value which lead to predictable selection of courses of action, from among many alternatives, will become rare. Pragmatic values--those that help to make decisions which "work"--will prevail. Pragmatism is, in turn, a key function of values; therefore, society will be divided and in conflict. Mass media will be used systematically to prevent societal disintegration.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Increasing difficulty in selecting content compatible with prevailing values and norms; greater tendency to create understanding of alternatives and to stress means for all students to create their own value system as well as to practice it	a. Greater stress on relations with students and the community	a. Improved recruitment and selection processes which result in exceptionally mature, healthy school personnel	a. Seminars grounded in philosophy--both general and educational
b. Difficulty in responding to conflicting pressures, to either facilitate change or to serve as a conservative force	b. Greater need for tolerance of ambiguity	b. Significant increase in liberalizing arts and knowledge	b. Planned living arrangements wherein students from varying areas of specialization live and study together for a sufficient length of time to facilitate in-depth interaction, both on and off campus
c. Problems in selecting instructional strategies and means	c. Greater need for skill in facilitating growth processes and for ability to use content as a means of developing new ideas and insights	c. Significant increase in intellectual-to-applied knowledge, insight, and skills-building in several field settings	c. Extensive training in conflict resolution, group negotiations, and interpersonal relations
	d. Increased capability for rapidly assimilating new conditions, integrating them into existing and emerging values, and guiding students in their value-building	d. Increased efforts to help preservice and in-service school personnel to develop and maintain a viable personal value system; therapy where needed	d. Varied field experiences and internships in settings that broaden understandings of value systems in operation

Governance and Services by Varied Agencies, Organizations, and Enterprises

1. OVERVIEW

a. Description

With tens of thousands of governmental units (including independent and quasi-independent school districts), the nation will continue its struggle to attain rational long-range planning and program coordination. These many units are likely to continue long after their historical origins are forgotten. They will respond slowly to major regional problems and crises. Additionally, quasi-legal or extra-legal organizations and associations will provide stimulation, leadership, and coordinating functions. Foundations and quasi-public private enterprises will supplement publicly operated services. Although expensive to maintain, the nation will add layers of institutions, agencies, organizations, and enterprises rather than scrap existing arrangements and rebuild the society. More creative utilization of existing fiscal, leadership, and data resources will be developed in a compromise position.

b. Consequences

The nation will continue its evolutionary efforts to respond to change and crisis. Those who feel desperate about the need for change will use violent means periodically to shake the establishment into action which will be a remediation rather than remodeling. Assuming a general material security, such remediation will be sufficiently creative to preclude general revolutionary convulsions.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Educational processes in many places under many auspices b. School-sponsored programs per se rather limited; for example, reading instruction and developing inter-personal skills	a. School staffs expert in teaching and learning; responsibility for aiding professionals in other diverse fields to carry out educational roles b. Diversity in kinds of preparation, competences, and interests	a. Greater emphasis on education in broad social context b. Comprehensive programs designed to produce broadly educated generalists and many kinds of specialists	a. Interdisciplinary studies b. Varied community experiences as observers and staff members c. Internships in varied agencies and organizations

A Controlling Elite

1. OVERVIEW

a. Description

The Protestant Ethic will atrophy as more and more enjoy varied leisure and guaranteed sustenance. Work as the means and end of living will diminish in importance except for a few with exceptional motivation, drive, or aspiration. No major source of a sense of worth and dignity will replace the Protestant Ethic. Most people will tend to be hedonistic, and a dominant elite will provide "bread and circuses" to keep social dissension and disruption at a minimum.

b. Consequences

A small elite will carry society's burdens. The resulting impersonal manipulation of most people's life styles will be softened by provisions for pleasure seeking and guaranteed physical necessities. Participatory democracy in the American-ideal mold will mainly disappear. The worth and dignity of individuals will be endangered on every hand. Only exceptional individuals will be able to maintain a sense of worth and dignity.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Conflict between the ruling elite and others concerning basic educational questions	a. Reduction to technician level for the bulk of school personnel who merely manipulate largely teacher-proof programs; creation of a small group of elite scholar-practitioners who help to plan and direct, in close collaboration with the total establishment	a. Difficulty in recruiting and retaining school personnel motivated toward demanding life-long professional development and at the same time "in tune with" the average and elite citizen	a. "Think-tanks" where changes and their implications are studied and interpreted
b. Increased emphasis on student motivation in a cooperatively planned educational program for most, highly structured program for the self- and societally-selected future elite	b. Development of a facilitating role, with status derived from demonstrated competence in helping students	b. Largely individualized instruction with planned extrinsic and intrinsic rewards	b. An individualized program in which an individual becomes "better balanced" in creative artistic and physical expression
c. Increased emphasis on content and activities contributing to pleasure and personal meaning		c. Increase in variety and depth of experiences with artistic expression and physical activities	c. Seminars and experiences in the field to keep school personnel in touch with the mass population
d. Individualized learning			

Conflict and Cooperation Among Peoples at Home and Abroad

1. OVERVIEW

a. Description

The dominance of Caucasians throughout most of the world has declined markedly since World War II. Rising pride in one's own kind--for example, black pride in the U.S.--will be a major future force.

b. Consequences

In the U.S., separatist movements will create increased demands for community control of societal processes and resources. Co-existence will be shaky and will break down at times. The old ideal of the American "melting pot" will not be maintained as viable.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Early, pre-school efforts to create self-concepts which are racially-oriented	a. Need to be accepting of racially-oriented self-concepts, objectives, and motivations	a. Great increase in emphasis on sociology, anthropology, history, and other disciplines which create an awareness of varied racial groups (and ethnic-religious groups)	a. Interdisciplinary studies, in small groups to provide for sensitivity development
b. Curricular objectives, materials, and methods which are tailored to particular racial-felt needs	b. Need to be able to build on them in planning and implementing broader curricular programs which can provide a reasonable counterbalance in the direction of national, world mindedness	b. Great increase in experiences with individuals different from one's own kind	b. Encounter experiences both in school and college settings, and also in the community; correlated sensitivity training
	c. Need to be able to work with the community in attaining educational objectives, capitalizing on varied community resources, and contributing unique professional competences	c. Great care in providing experiences with varied kinds of individuals leading from vicarious, structured experiences to carefully selected field experiences	c. Personally relevant but structured experiences through such means as simulation, laboratories, games, literature
			d. Micro-teaching, directed field teaching, and internship in varied settings
			e. Studies of languages and arts of diverse groups, and live-in experiences

International Arrangements and Nationalism

1. OVERVIEW

a. Description

Spheres of influence will be less predictable in years ahead. They will be more stimulated by nationalistic, ethnic, or racial factors than by all-encompassing ideologies and power blocks. A countervailing influence will be improvements in transportation, communication, economic arrangements and, perhaps, fear of catastrophe. Charismatic leaders and emotionalized local issues will maintain ethnocentrism for the foreseeable future. A fragile fear of holocaust will prevent major wars, which no one could "win".

b. Consequences

The American society will continue to be a distinguishable, viable entity. Cooperation will exist with other nations and international groups, but this will not produce extra-national loyalties.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content in flux as new national and international movements rise and wane	a. Greater need to understand the complex interface of innumerable variables	a. Efforts to provide varied international and inter-cultural instruction and experiences (to yield insights of American and others' cultures)	a. Field experiences in diverse racial and ethnic settings
b. Emphasis on how to understand power dynamics and related ecology (rather than mastery of facts)	b. Great need for ability to weave national goals and processes into the fabric of the larger world community	b. Efforts to prepare school personnel who can promote objective study and discussion of complex issues	b. Overseas studies for general education
c. Efforts to build rational thinkers capable of flexible responses		c. Provision for making school personnel familiar with and competent in instructional tools which can help bridge time, distance, and cultural gaps	c. Work experiences in different parts of the world, both in education and in other fields, to provide in-depth knowledge of and experiences with other peoples
d. Continued pressures to build patriotism, with tolerance for reasonable international emphasis			d. Communications centers with telephonic film, print, computer, translation, and other capabilities related to the world
			e. Use of international simulation games

Knowledge Explosion and Means of Analyzing, Processing, Storing, and Retrieving Ideas and Information

1. OVERVIEW

a. Description

Knowledge will increase in geometric proportions, increasing the quantity available and in many cases causing existing knowledge to become partially or totally obsolete. There will be increased capabilities for managing information and making it available in processed, personally relevant form and substance. Means eventually will be developed to transfer to individual brains new knowledge automatically.

b. Consequences

Society will have vast data banks which can be updated continuously and utilized in a systematic assessment of what prevails and steps which must be taken to attain current objectives. Decision-making will be systematic and decisions will be implemented readily.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content in constant state of flux b. Search for structures of knowledge c. Emphasis on use of knowledge as a decision-making process and general tool to adapt to change and meet objectives d. Use of technological capabilities to provide current bank of ideas and information, including means of up-dating printed materials e. Experiences in using knowledge in personally and socially relevant situations	a. Pressures to be among best informed people and most competent in applying knowledge b. Necessity to know how knowledge is related in the abstract and in relation to particular teaching-learning situations c. Necessity to be adept in using varied means of storing, retrieving, and receiving ideas and information	a. Increasing length, breadth, and depth of preparation programs b. Increasing use of many disciplines, to provide both content and insights and data on how to organize teaching-learning activities c. Processes for in-putting new knowledge--from sources such as the Educational Resources Information Center, professional associations, and journals--into programs' varied components and for up-dating performance assignments for individuals	a. Individual use of data banks, both local and worldwide--thus gaining access to man's store of knowledge and varied perceptions of it b. Interdisciplinary seminars focussed on interrelationships of knowledge and how to use different modes of inquiry c. Individual cassettes to keep in-service personnel updated, and supporting mediated materials to instruct groups and to stimulate group interaction d. Staff-student committees responsible for continuous curriculum revision

Systems Approach and Cybernetics

1. OVERVIEW

a. Description

The use of the systems approach to problem solving and of cybernetics to manage automation will remold the nation. They will increase efficiency and depersonalization. Man's traditional slow speed in thinking through problems, analyzing alternatives, testing and evaluating them, and implementing them will be eliminated by computers and cybernetics. Only a few people will be able to have a major role in the processes, and they will apply the remnants of the Protestant Ethic. Most of the population will seek meaning through other means or devote themselves to pleasure seeking. The controlling elite will engage in power plays largely without the involvement of most of the people.

b. Consequences

The society will be a leisurely one. People will study, play, and travel; some will be in various stages of the drug-induced experiences.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content organized into computer directed performance tasks	a. Need to understand and use management capabilities	a. Instruction in and application of systems approach and cybernetics	a. Laboratory experiences in systems approach and cybernetics
b. All management aspects of school and classrooms computerized, releasing school personnel for human interaction roles	b. Need to guide the young in an understanding of and mastery of computer-machine capabilities	b. Intensive study of personal-societal consequences of change	b. Seminar on futurism
c. Emphasis on learning and applying processes involved in thinking and implementing	c. Need to be able to guide the young in the development of personal values in the societal context	c. Intensive study of logical, critical thinking and other intellectual tools for decision-making	c. Periodic work experiences in non-school agencies or enterprises in which cybernetics is applied
d. Extensive study of personal-social-implications of systems approach and cybernetics			

Diffusion of Prosperity and Increased Social Mobility

1. OVERVIEW

a. Description

General prosperity will be widely diffused; exceptional wealth will continue to be scarce. Wealth and power will be monopolized by the elite. This status will be based on competence, training, and achievement and will be open to anyone regardless of his origin. The total number of places in the elite will be very small, and only the exceptional will attain places there. While the offspring of the elite and near-elite will have an advantage in entering elite status, there will be fluidity in upward mobility. The relatively small number of poor people will be highly visible and the object of much study and remedial effort.

b. Consequences

Society will be rather contented because of general prosperity, and adequate upward mobility to satisfy the non- and near-elite with exceptional motivation and capability.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content focussed on value building, process competency, logical and critical thinking, interpersonal relations, and pleasure-cultural development--and other attitudes and skills compatible with a non-work world	a. Need to develop curricular goals which are process-oriented and pragmatic	a. Increased emphasis on relating education to prevailing societal conditions and study of disciplines providing such understanding	a. Seminars on existing and emerging conditions
b. Efforts to help individuals develop reasoned objectives and compatible strategies	b. Need to help students to think through alternatives, select viable objectives, and plan strategies for reaching them	b. Increased efforts to develop skills in prescriptive teaching	b. Course work and programmed study materials in several academic disciplines
c. Special efforts to help those, including disadvantaged, with special capabilities to work toward elite status	c. Need to work with both an elite and general populace in attaining diverse and often divergent objectives	c. Increased efforts to provide school personnel with competences needed for participation in a leisurely society (and hopefully some identity with it)	c. Laboratory experiences in diagnosing student capabilities, learning problems and planning experiences
		d. Many and varied experiences with different kinds of people	d. Field experiences to broaden understanding of the different aspirations and life styles of the people, for example, in a work crew working on a community project in Appalachia
			e. Workshop in recreational leadership

Communications Capabilities and Potentialities for Opinion Control

1. OVERVIEW

a. Description

The range of communications capabilities will be increased significantly. Each individual will receive at birth a multi-purpose identification number which will have, among other things, extensive communications uses. None will be out of communication with those authorized to reach him. Each will be able to receive instant updating of ideas and information on topics previously identified. Routine jobs to be done in any setting can be initiated automatically by those responsible for the task; all will be in constant communication with their employers, or other controllers, and thus exposed to direct and subliminal influence. Mass media transmission will be instantaneous to wherever people are and in forms suited to their particular needs and roles.

b. Consequences

Each individual will be saturated with ideas and information. Some will be self-selected; other kinds will be imposed overtly by those who assume responsibility for others' actions (for example, employers); still other kinds will be imposed covertly by various agencies, organizations, and enterprises. Relatively few individuals will be able to maintain control over their opinions. Most will be pawns of competing opinion molders.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content organized into small components which can be communicated through varied means to individuals in scattered places	a. Need to organize learning activities, monitor and diagnose progress, prescribe next steps in collaboration with students, and continue to assess progress relative to proficiency criteria	a. Increased emphasis on communications competences	a. Periodic experiences in a communications laboratory
b. School-centered activities largely limited to seminars, evaluation activities, etc.	b. Need to master varied kinds of communications competence and techniques	b. Increased emphasis on instructional strategies and means	b. Structured experiences in helping students to analyze communications
c. Capabilities to communicate with schools around the world		c. Increased study of personal-social-implications of communications	c. Seminar discussions on communications
			d. Study of education around the world, in order to relate it to U.S. education

Transportation Capabilities (Supplemented by Communications Capabilities)

1. OVERVIEW

a. Description

Improved transportation will contribute in a major way to the nation's economy, politics, sociology, and values.

b. Consequences

The society will shift, with great rapidity, its values and operational processes for implementing them. The nation will be united in one sense, and at the same time divided as a consequence of shifting values stimulated by mobility (and resulting lack of roots.)

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Individualized programs which enable students to move into the school or transfer out at any time	a. Need to work with children from many backgrounds, often highly stimulating	a. A rich interdisciplinary series of studies and experiences	a. Interdisciplinary seminars
b. Efforts to help students to establish an internal equilibrium regardless of residence	b. Need to be exceptionally sensitive to the available paths to humanness	b. Extensive experiences within the arts, to expand sensitivities and perceptions	b. Periodic study and recreational tours
c. Learning experiences in many places for long periods of time	c. Need to help children develop an inclusive patriotism and an empathy for others		c. Staff service with traveling groups of students
d. Content which stresses interrelatedness is demonstrated			

Nuclear Power

1. OVERVIEW

a. Description

Unlimited power will be provided by nuclear generators. Men and animals will terminate their physical energy roles. Power will be available to reshape not only life styles but also the earth itself. Animals will be kept only for affectional or conservational reasons, but in small numbers since they will be seen as competitors for valuable space and food.

b. Consequences

Society will have capabilities to do the jobs which need to be done, since it will have the necessary energy as well as cybernetic competences, both transcending limitations of men in getting tasks completed. Philosophical-political-economic factors will limit the application of capabilities made possible by abundant power and other resources.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content reorientation to the concept of plenty	a. Need to provide guidance to students in finding values and activities which are non-work-oriented	a. Increased emphasis on philosophical studies	a. Seminar emphasis on foundations area
b. Efforts to motivate students to plan ways in which available energy can be used adequately	b. Need to develop skills in guiding students in the development of their social values	b. Slight increase in study of the technological capabilities of nuclear age	b. Some course work and laboratory experience focussed on technology
c. Increased study of international implications of nuclear power	c. Need to understand the peaceful and destructive potentialities of nuclear power	c. Increased study of other areas of the world	c. Area studies--both in U.S. and overseas--and intercultural studies and experiences within the country

Space and Underwater Explorations

1. OVERVIEW

a. Description

Extending man's long history of exploring beyond his immediate surroundings, space and underwater explorations will have great impact on mankind. The "because it was there" motivation of the explorer will thrill and inspire many; it will inspire new confidence in man's capabilities. For others, the extension of man-mastered boundaries will increase a sense of doubt or even despair, generated by feelings of personal smallness in a big, incomprehensible world. While initially consuming major economic resources, the explorations downward and outward will be beneficial in terms of process and product spin-offs. Spin-offs will affect both man's abilities and attitudes in major ways.

b. Consequences

Society will tend to glorify technological aspects of exploration. The humanities will be seen as unproductive in contrast. The technological advances will create at least two counter-tendencies: 1) toward adequate funding in social-humanistic projects, 2) toward utilizing systems approaches in solving major human problems.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content with increasingly heavy technological emphasis, especially for the elite	a. Need to understand the social implications of explorations as well as the technological ones	a. Some efforts to increase science-mathematics competency	a. A seminar with technological-humanistic emphases
b. Some efforts to increase the humanities and social science emphases, especially for the average student	b. Need to utilize the way of thinking and behaving implicit in exploration in guiding student growth	b. Greatly increased efforts to apply a systems approach to programs	b. Use of programmed material to provide factual information
c. Increased emphasis on systems approach to problem solving		c. Major increase in efforts to help school personnel transcend provincialism of all kinds	c. Encouragement of brainstorming on relevant topics in mixed disciplines living units

Environmental Pollution

1. OVERVIEW

a. Description

With more people concentrated heavily in limited areas, the environment will become increasingly polluted, in spite of capabilities for remedial and preventive actions. Complexity, inertia, and incapability to bridge local, area, state, regional and national gaps will combine to prevent adequate improvements. This will negate some of the progress made possible by the biological and medical fields.

b. Consequences

The citizenry will suffer physically, economically, and esthetically. Too-little too-late efforts will prevent a societal breakdown, but major problems will continue.

2. EDUCATIONAL OUTCOMES	3. IMPACT ON SCHOOL PERSONNEL	4. IMPACT ON PREPARATION PROGRAMS	5. ILLUSTRATIVE RESPONSES
a. Content more heavily oriented toward conservation and health	a. Need to utilize total curriculum in societal efforts to combat environmental strangulation	a. More emphasis on the social utility of all curricular areas	a. Units on environmental improvement in existing courses
b. Physical facilities designed to create good health conditions within the schools themselves	b. Need to understand the dynamics of environmental deterioration and processes for improving conditions	b. More instruction on environmental factors and related field experiences	b. Laboratory experiences focussed on applied improvement practices
c. Provisions for extensive health services to offset environmental deficiencies	c. Need to work effectively with laymen and other professionals to create a healthy, pleasant, and a productive environment	c. More emphasis on community leadership skills	c. Teaching unit development and development in micro-teaching situations related to environmental improvements

democratic society needs all the tools possible for rational decision-making. Without such tools, the wishes of the people may become whimsical in intent and implementation. What is needed to minimize this possibility is an institutionalized process for affecting needed change compatible with the general welfare. This paper suggests several tools and capabilities for making this a reality.

What does the future hold for the American people? What are the educational consequences for the future equivalents to elementary and secondary schools? What then are logical reactions in school personnel preparation programs? Several categories are used below to focus attention on types of changes anticipated and upon their educational consequences; then questions are posed for personnel trainers.

Population Size, Density, and Distribution

Population increases and concentration into relatively small portions of the nation will create problems of great magnitude. In this setting education will begin early and continue for a lifetime. Maintenance of personal uniqueness while mastering interpersonal skills required to make societal contributions will be a major curricular objective. The percentage of relatively young persons--supplemented by those who think young--will produce a present-orientation to education.

How can personnel preparation programs--both preservice and in-service--help school personnel develop their own uniqueness and maturity, to the point of being able to help others to attain unique selves? How can they learn to understand the complexities of a massed people and at the same time become professionals of exceptional competence, depth, and breadth? How can school personnel be prepared to help pupils to protect their uniqueness while making contributions to the solution of complex social challenges?

Biological Capabilities

From birth control, to prenatal programming for specific capabilities and characteristics, to modifications after birth--these capabilities point to the biological tools man will have to determine the kind of creature he will be. The educational implications will be great. Traditional blocks to total growth will be preventable and correctable, and potentialities can be programmed as desired.

How can school personnel harmonize their philosophy and practice with biological sciences' potentialities and practices? How can personnel be helped to provide vital education for a wide range of individual differences? What are the implications of biological capabilities for modifying pre- and in-service personnel?

Human Relationships and Governance

Value systems will change rapidly in efforts to reflect other kinds of changes. The rapidity of change and its complexity will lead increasingly to an elite controlling group for the total society and for various professional-specialist groups. Idealized democracy--the town-meeting kind--will disappear as most of the population resigns itself to a benign, materialistic society. Conflict will erupt periodically as an expression of built-up hostilities against the elite and of separatist movements based on efforts of racial, ethnic, and value-seeking groups to establish some sense of community. Governance in this nation and among the nations of the world will continue to be rather haphazard and inefficient, considering man's expertise, and beset by national and international equivalents of tribalism. Paradoxically, this may provide some protection of uniqueness and a proving ground for emerging ideas and processes. Educational values will shift with societal values, and education leaders will be under great pressures--often conflicting pressures--to seek prescribed objectives through specific processes. These educators will be hard-pressed to respond to varied groups' efforts to establish a sense of community concurrently with nation-building-and-binding efforts. Likewise, stresses will occur as the nation attempts to protect the dignity and worth of individuals while educating its young to live in a kind of world which will stress expertise of a few and general acquiescence and pleasure-seeking by the many.

How can school personnel develop value systems which are pragmatic and adaptable, yet which are in harmony with democratic values? In what ways can school personnel learn to stimulate the attitudes and competences required of some citizen-leaders--various elites--and also serve all students fairly and well? In what ways can school personnel learn to function as professional guides to student growth and at the same time function as educational leaders in the larger society? Can school personnel stimulate rational thinking, hard work, and democratic values for a sufficient number of persons to hold the society together--a holding action against blatant hedonism and materialism?

Man's Natural and Technological Resources

While exploring the ocean depths and the outer limits, man will have increasing problems with the earth beyond his doorstep. There, the earth will reflect ravages and unwise use. However, improvements will be made in converting resources through the use of systems approaches to problem solving and decision-making. Cybernetics will push man into non-work roles. Unlimited power will enable him to transform his life. Transportation and communications capabilities will bind man, natural resources, and technological resources together--totally changing concepts of economics, politics, community, family, and others. The

potentialities and complexities will be so extreme that operationally an elite will make important decisions and implement them--either directly or indirectly through input into largely impotent legislative bodies. A crucial question will be whether an elite can be responsive to the general welfare. Education will move toward preparation for exploration of the unknowns of all kinds--in all cases requiring technological competences. The humanities will be relegated to a secondary role even though they could stir man to seek quality, creative living. Through education the non-elite majority will have some opportunity for quality living and maintaining a sense of worth and dignity.

Can school personnel learn those capabilities needed to help the young be unique yet socially competent and productive? How can school personnel learn to balance instruction between the technical and the humanistic? What kind of preparation program could help school personnel understand what now is and what could be? To what extent should school personnel learn to teach in a narrow sense and to what extent learn to promote learning in the community while in varied leadership roles? In what ways can school personnel learn to use technological tools to extend and enhance staff and student capacities? What philosophical tools are needed to help school personnel make value judgments in guiding the young?

Certain illustrative responses to change have just been made relative to preparation programs. A few basic questions will now be raised and points made in response. The objective will be to focus on personal programs in the context of projected changes.

1. What behavioral objectives should be developed and performance criteria specified for preparation programs? The educational programs of the future will have to be exacting ones to meet the needs of the times. The rapidity of change and the consequences of decisions are too important to justify laissez faire development of educational objectives, strategies, and assessment and restructuring mechanisms. The preparation program will be highly specified behaviorally, and performance criteria will be established to help preparation program staffs to determine when a person is ready to pass from one instructional sequence or one role level to the next. Demonstrated competence--in ways which range from the highly abstract to applied skills--will be a significant factor in life-time progress toward professionalism. Sequence in and pacing through the steps in the program will be adapted to individual pre- and in-service personnel. Such individual programmatic scheduling will be possible through a computerized matching of objectives, performance criteria, and diagnosis-prescription of individual career paths, problems, and progress toward objectives.

1. What kinds of persons should be recruited and trained for future educational roles? Certain characteristics will be crucial

and should be sought actively. Absolute competence will be required of those with responsibilities for status and informal leadership roles in many and varied places where instruction takes place. High ability will be required of other school personnel, especially for those in non-leadership instructional roles. Other required characteristics will include: adaptability to change and imagination in response to it, sensitivity to other people and interpersonal skills, high intellectual ability (suitable for synthesizing and applying many academic fields to education), civic competence, and exceptional communications skills. All these have been important to this point, but in the future only the exceptional will be able to attain an adequate mix of knowledge, understanding, skill, interpersonal relations, community leadership, and so forth. Scholar, practitioner, group leader, tutor, learning diagnostician--these and additional labels illustrate the varied, complex roles of future school personnel.

3. What personal-social-physical deficiencies and limitations should be remediated? As noted in "1" above, careful diagnosis will be made to determine individual, pre- and in-service school personnel's compatibility with behavioral objectives for them. Passing from one prescribed instructional unit ("module") to another will require remedial steps in some instances (for example, speech correction). Significant personality and emotional problems will be treated. Health problems will be solved. Drugs and chemicals will be used for medical treatment of physical, mental, and emotional problems. In some instances--where significant to roles--transplants and body repair will be conducted. In recognition of educational personnel's crucial role, the nation will make every effort to remediate where necessary to create a fully functional, healthy, and wholesome person. Such persons also will receive various treatments to accentuate their assets.

4. What intellectual competencies should be developed, and what knowledge should be learned? The ability to utilize many modes of inquiry will be essential for school personnel. More than ability to memorize facts will be necessary. School personnel will have to synthesize, interpret, and apply the contributions gleaned from many fields. A major task will be to help students to develop comparable skills. In times of specialization, syntheses of many fields will be most important. No person can become a master of all modes of inquiry; therefore, viable coalitions of professionals and experts will be imperative. Capability to secure data, interpretations, and consultation will be established. A compatible system of securing, processing, storing, and retrieving information from all major fields will be developed. This system will reach into the whole world. School personnel will be required to learn much from many fields and to function within the larger societal structure for using the knowledge, insights, and skills of many disciplines.

5. What values should school personnel hold and what related traits should they exhibit? Democratic values generate both objectives and processes, all of which will be severely tested in the future. Objectives such as individual dignity and worth will be difficult to attain under conditions which require elitist status derived from specified training, definite experiences, and demonstrated competences. Further, such objectives will be difficult to attain when men's economic productivity will be limited to a few professionals and technicians who make decisions and convert them into cybernetic processes. Historic processes for attaining democratic objectives will be largely incompatible with the forces of complex and rapid change. Orderly and extended debate, involvement of those affected by decisions, and popular selection of rulers without technical or competency criteria--these and other aspects of the democratic processes will be incompatible with elitism. A hopeful note is in order: it would be possible to use existing technology to involve tens of millions of people in certain non-technical aspects of decisions. They could decide on broad objectives and strategies and leave technical implementation to the experts. Likewise, legislators could make certain kinds of decisions. Certain questions persist: Will enough of the population care about such involvement as long as hedonistic pursuits are available? After experts have studied issues and alternatives --in effect decided what decisions the people could and should make--will there be much real democratic decision-making left? Will the elite manipulate the general populace so effectively that democratic practice will die of disuse? In this kind of unclear context, it is difficult to project the values needed by future school personnel. It appears likely that democratic values will continue to be legitimized and verbalized in the United States. Therefore, school personnel should have a commitment to democratic values. Care will be required in recruiting, preparing, and retaining persons who have adequate self-concepts, maturity, empathy for and sensitivity to others, and competences necessary to help students to attain their fullest potentialities. These traits will need nurture in lifelong preparation. Democratic processes will be so fragile that only exceptional school personnel will be able to help students to become competent yet humanist citizens. Perhaps competency is the appropriate closing emphasis for this section. If democracy is to survive, school personnel, students, and general citizens must demonstrate competence of all kinds. Democracy will be tolerated only if technological competence is a demonstrated product. School personnel will be challenged to "produce" students who are unique, effective in democratic processes, knowledgeable in a number of disciplines and technologies, and skilled in applying what they learn. This means that school personnel will be competent in human terms, as citizens in a complex society, and as professionals challenged to live and work in many settings and to demonstrate excellence in diverse tasks--both technical and humanistic.

6. What laboratory-clinical experiences should be programmed? Exacting precision on the nature and processes of teaching will make it possible to lead school personnel into full professional status. Beginning with a battery of data on each trainee, extensive interviews by varied professionals, records on mastery of performance tasks, the trainer of school personnel will be able to develop a prescription for progress for each trainee. Certain intellectual tasks will be included, and early in preparation programs there will be laboratory experiences coordinated with cognitive-type tasks. Timewise the trainee increasingly will have more direct, structured experiences, designed to stimulate specific competences in working with students. Increasingly the trainee will have experiences which are concrete, which involve big tasks, which involve more students. The capstone experience will be an internship, where the trainee will become a part of a functioning team, composed of several persons with differentiated roles and responsibilities. After the internship--which may take one or more years--the trainee will be licensed to teach on the basis of his demonstrated competences. Continued licensure will be dependenton a positive assessment by a licensure committee composed of peers, system administrators, collegiate teacher trainers, and young and adult citizens. Mastery of competences demonstrated in laboratory situations will be an important factor in periodic reviews of licensing eligibility. The tools available will include microteaching, simulation, game playing, counselling practicums, and so forth.

7. What kinds of spaces, places, and learning tools should be utilized? Training school personnel will be a task for many persons in different kinds of places. Collegiate personnel will continue their responsibility for basic instruction, including theory, foundations content, and structured and simulated practice. On campus and in training centers in nearby and distant communities--and in other lands--school personnel will be trained in specialized spaces such as closed circuit T.V. studios, psychology laboratories, speech and health clinics, community centers, and so forth. In such places, the personnel will receive specialized assistance, and they will work with students. Sometimes special equipment will be needed; at other times, general space, a community business or agency, or the out-of-doors will be used. A mobile classroom-dormitory will be utilized in still other cases. In several instances much instruction will be provided by non-collegiate personnel, and often there will be teams of different kinds of personnel. With new kinds of collaboration, and communications and transportation capabilities, there will be no justification for having experiences on campus when they would be more effective elsewhere. Likewise, the use of different kinds of people in preparation programs will become common, as the total society recognizes the imperative of preparing effective personnel. By the time school personnel are initially licensed, they will feel "at home" in the varied places where education takes place.

More importantly, they will have demonstrated capability to work in varied spaces and places.

8. What provisions should be made for continuous evaluation of the product and for continuous regeneration of the preparation processes? In times when societal and educational changes will be constant and when school personnel will have to grow all during their careers, assessment will be highly visible. Preparation programs will have assessment-regenerative provisions built in. Computer directed instruction will provide data on what works and what changes are needed. Rapid adjustments will be common. Such changes will be made on pre- and in-service levels. Assessment of personnel will be made on the basis of performance criteria, on pre- and in-service levels. Content memorization and verbal recall will be important where this is part of a performance task, but intellectual exercises will be included among many kinds of tasks. With sophisticated assessment procedures and information analysis, problems and effectiveness of people and programs will be continuously assessed. Continuous regeneration of programs will be feasible. While assessment will be programmed, human judgments will prevail in the interpretation and application of data. Human perceptions will be broadened by good assessment tools and techniques. The use of assessment will be a major role for school personnel and their trainers.

Conclusions

The future's certainty is change and challenge. Let me change from the impersonal style used to this point to some very personalized conclusions about this. Ultimately intellectual experiences should be translated into personally meaningful terms, for this is the beginning of action to implement the meaning of this paper.

1. There are very real doubts in my mind concerning the future of our democratic way of life.

Yet, intimations of the future suggest capabilities for making democracy more responsive to the needs of people and more successful in planning for the use of all resources, knowledge, and processes in the service of mankind.

2. Population concentrations may grind individuals into a sense of impotence and undermine their feelings of worth and dignity.

Yet, concentrations could make it feasible to provide the very best services and activities possible. Further, transportation and communications capabilities could provide adequate contacts with people

and places far removed. Closeness could create a sense of appreciation of rich diversities of various groupings of individuals and enrichment, without homogenization, from interaction with those who are "different."

3. Biological capabilities may be misused to promote narrow, selfish interests.

Yet, they could be used to overcome limitations which have in the past held people down. They could be used to create healthier minds and bodies and extend capabilities for enriched perceptions and feelings.

4. Systems approaches and cybernetics may reduce men to robots without a sense of worth, humaneness, justice, or yearning to be free.

Yet, they could free man to find himself as a unique entity recognized for what he is rather than what he produces. They could remove material causes of conflict and greed.

5. Improved capabilities in communications and transportation may stimulate such mobility that people cannot feel an adequate sense of stability; such capabilities may stimulate movement of people comparable to pawns on a chessboard.

Yet, they could provide means for enriching and effective interaction with peoples everywhere. This could stimulate improvements and movement away from provincialism (without destroying meaningful diversity).

6. Rapid changes in and proliferation of values and objectives may create divisiveness which will rend the society into conflicting subgroups.

Yet, the value changes could create a wholesome acceptance of continuous movement toward values which are viable for the times. They could be directed toward increased humaneness, justice, freedom, peace, and honesty in human relations.

7. Tendencies toward racial, ethnic, class, and national manifestations of tribalism may create fears, tension, and conflict as standard conduct.

Yet, a reasonable degree of "tribalism" could counteract other trends toward pervasive conformity and provide a degree of experimentation with and application of differences in values, objectives, processes, and products. Out of this could come a rich interaction of peoples who have developed reasonable pride grounded in being a part of a distinguishable, supportive "tribe."

8. Education may be reduced to indoctrination, prescribed skill development, induced "satisfaction," and routinized searches for pleasure and comfort.

Yet, it could become individualized, relevant, and enriched by tools of technology and a worldwide resource of people, places, and things. There could be a lifelong growth in knowledge, insights, and competences for all humans. There could be a satisfying mix of that which humanizes and that which facilitates effective, competent citizenship.

9. School personnel preparation programs may become prescribed exercises in information mastery, skills development, attitude change, and competency development at rigid performance levels. School personnel may become prepared to use largely teacher-proof materials and tools, prescribed by an excessively small, selfish elite not responsible to the general populace.

Yet, it would be possible to prepare school personnel capable of using the right mix of content, materials, equipment, spaces, and places to help children and youth to attain their uniqueness and competence to live democratically in a most complex world.

Futurism should not become fatalistic. Projections should not become self-fulfilling prophecies. Futurism should be used to react to change in the context of values and processes compatible with democracy. Such a tool should be used, along with the increasingly wide array of intellectual and technological tools, to move man toward his self-identified destinies.

The future is not in itself fearsome. To those who have vision, will, perseverance, and developed competence, the future is a challenge of great magnitude. The task is to create in social endeavors the kind of sturdy erectness of spirit man has found in climbing Mt. Everest, stepping forth on the moon, or rebuilding after disaster. He must learn to walk with erect spirit, mind, and body among his neighbors --when he effectively forges human and natural resources to serve each man and help him create his uniqueness <u>through the tools which he has learned to use in the places of learning</u>. Is this not what the future is all about?